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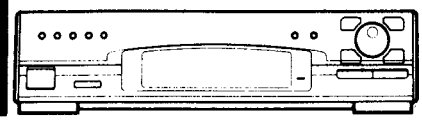
PIONEER®
The Art of Entertainment

Service Manual



ORDER NO.
ARP2372

SOUND IMAGE CONTROLLER

GR-J400
GR-J300

GR—J400 AND GR—J300 HAVE THE FOLLOWING :

Type	Model		Power requirement	Remarks
	GR—J 400	GR—J 300		
ZEB	○	○	(DC power supply)	
ZEWZIW	○	○	(DC power supply)	

- **This manual is applicable to GR—J400/ZEB and GR—J300/ZEB types.**
- **As to GR—J300/ZEB type, refer to page 17.**
- **As to the other types, refer to applicable service manual.**
- **These products are components of systems. As to the system composition, refer to the system manuals.**
- **Each of these products does not function properly when independent ; to avoid malfunctions, be sure to connect it to the prescribed system components, otherwise damage may result.**

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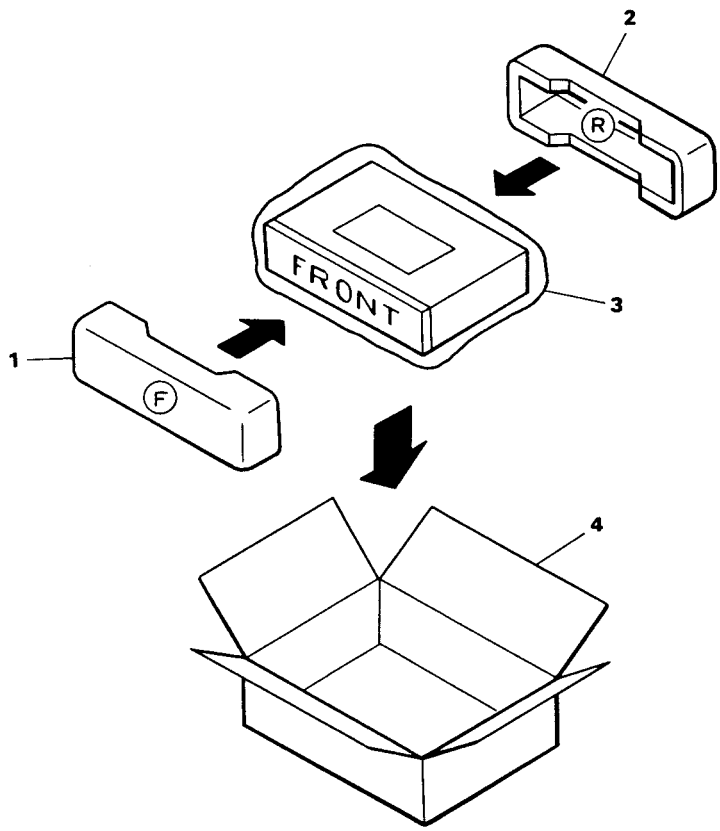
4048

1. PACKING

NOTES :

- *The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Parts No.
	1.	FRONT PAD	AHA1469
	2.	REAR PAD	AHA1470
	3.	PACKING SHEET	AHG1017
	4.	PACKING CASE	AHD2198



PIONEER®
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Service Manual

ORDER NO.
ARP2433

SOUND IMAGE CONTROLLER

GR-J400 ZEWZIW

GR-J300 ZEWZIW

- **Refer to the service manual ARP2372 for GR-J400/ZEB.**
- **This manual is applicable to GR-J400/ZEWZIW and GR-J300/ZEWZIW.**

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CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Part without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

GR-J400/ZEWZIW, GR-J300/ZEWZIW and GR-J400/ZEB have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		GR-J400/ZEB	GR-J400/ZEWZIW	GR-J300/ZEWZIW	
◉	CENTER assembly Packing case Front panel Foot assembly	AWZ3818 AHD2198 AMB1919 RXA1448	AWZ3819 AHD2198 AMB1919 RXA1448	AWZ3819 AHD2199 AMB1922 RXA1277	

◉ CENTER assembly

CENTER assembly (AWZ3819) and CENTER assembly (AWZ3818) have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ3818	AWZ3819	
	C344, 345	.....	CKPUYB331K50	
	C501 — 506, 511, 512	.....	CKPUYB101K50	
	C507, 508, 513, 514	.....	CKPUYF473Z16	
	C509, 510, 515, 516	.....	CKPUYB102K50	
	L501 — 505	.....	LAU010K	

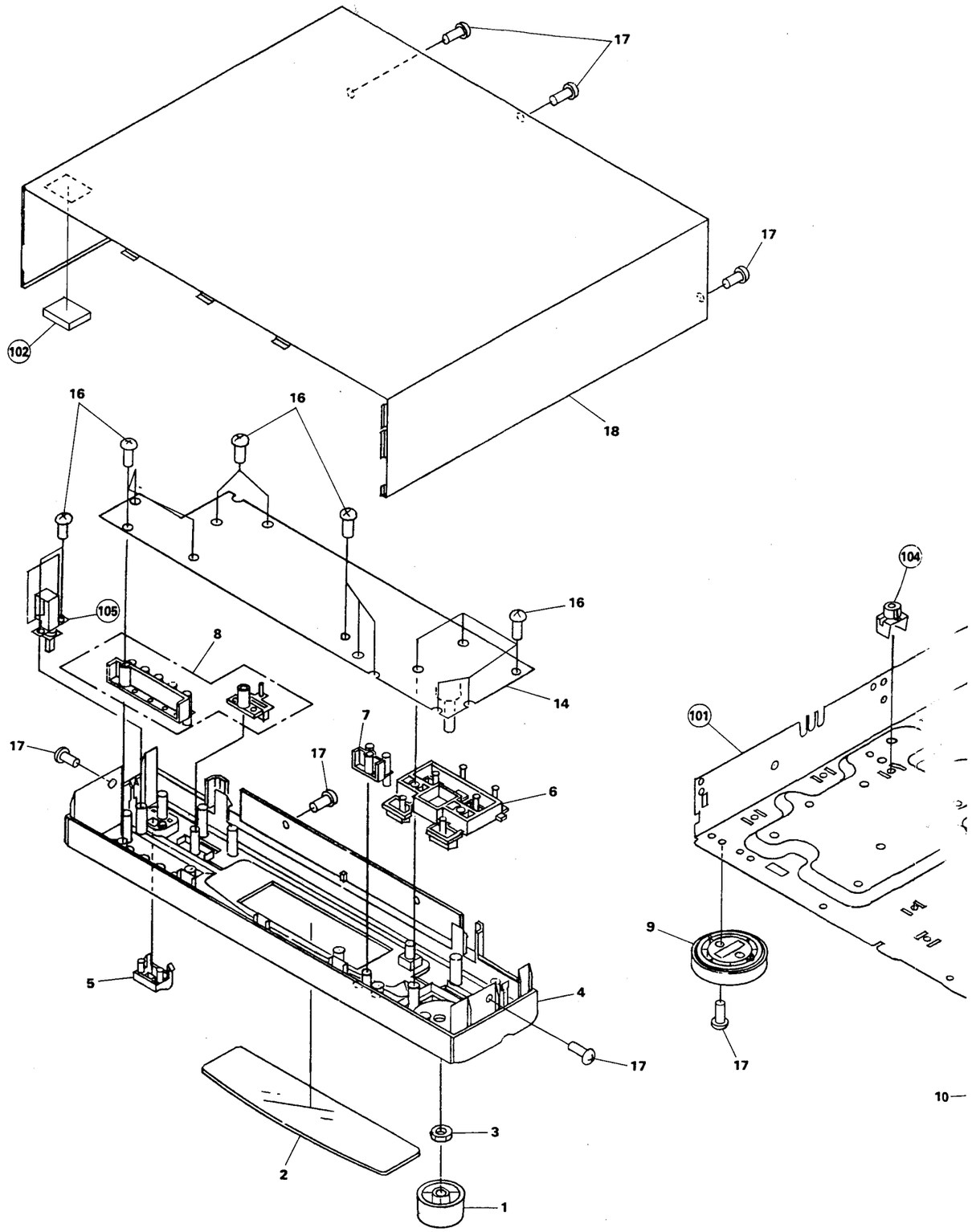
Note: *The schematic diagrams and P.C. Board patterns for GR-J400/ZEWZIW and GR-J300/ZEWZIW refer to the service manual ARP2372 for GR-J400/ZEB.*

2. EXPLODED VIEWS AND PARTS LIST

NOTES :

- *The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Screws adjacent to ▼ marks on the product are used for disassembly.*

Mark	No.	Description	Parts No.
	1	ROTARY KNOB	AAA1011
	2	FL PANEL	AAK2253
	3	NUT	ABN1016
	4	FRONT PANEL	AMB1919
	5	POWER BUTTON	AAD2147
	6	IMAGE BUTTON	AAD2145
	7	BAND BUTTON	AAD2100
	8	PROGRAM BUTTON	AAD2146
	9	FOOT ASSY(ABS)	RXA1448
	10	LEG ASSY(S)	AMR1937
	11	.....	
	12	CORD WITH PLUG	ADE1118
◉	13	CENTER ASS'Y	AWZ3818
◉	14	FRONT ASS'Y	AWZ3820
	15	SCREW	ABA1018
	16	SCREW	BPZ26P080FMC
	17	SCREW	ABA−298
	18	BONNET CASE	ANE1324
	101	CHASSIS	ANA1160
	102	SPACER	AEC1201
	103	PCB MOLD	AMR1525
	104	PCB MOLD	AMR2115
	105	POWER SW ASS'Y	AWZ3821
	106	REAR PANEL	ANC1790



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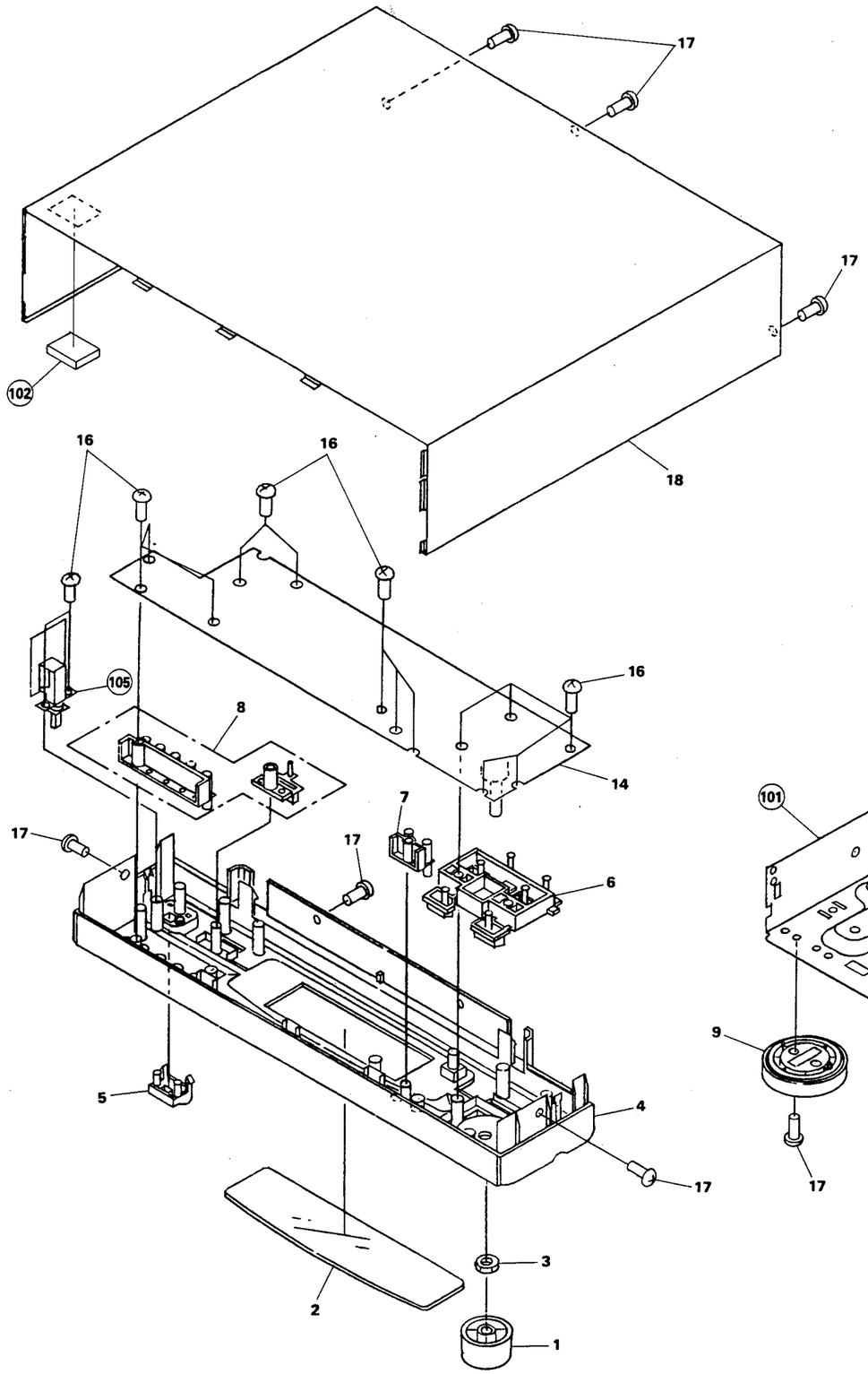
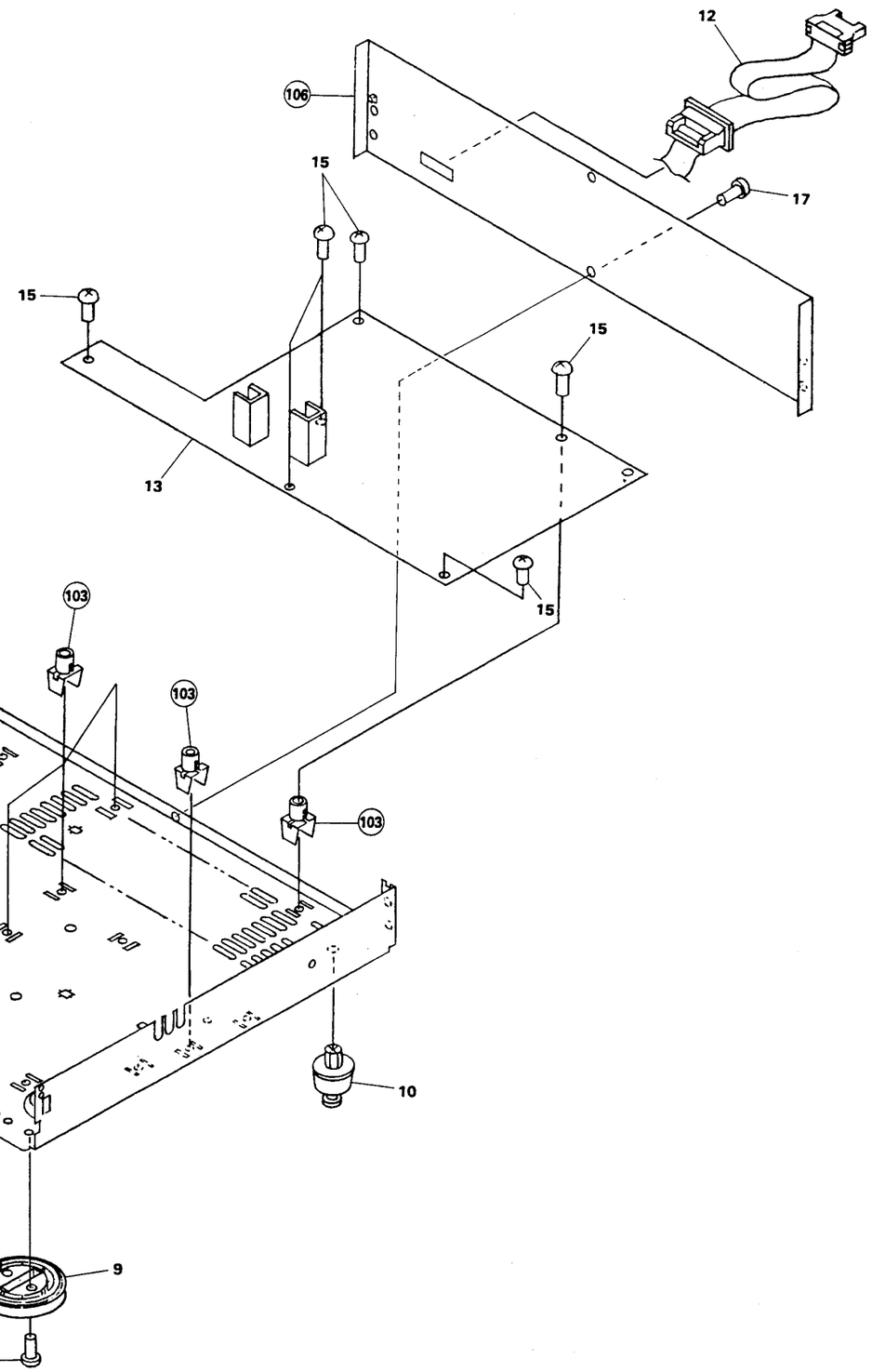




A

B

C

D

3. SCHEMATIC DIAGRAMS

CENTER Ass'y(AWZ3818), FRONT Ass'y(AWZ3820) AND POWER SW Ass'y

1.RESISTORS :
Indicated in Ω, 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ± 10%, (M) ; ±20% tolerance.

2.CAPACITORS :
Indicated in capacity (μF)/voltage(V) unless otherwise noted p ; pF.
Indication without voltage is 50V except electrolytic capacitor.

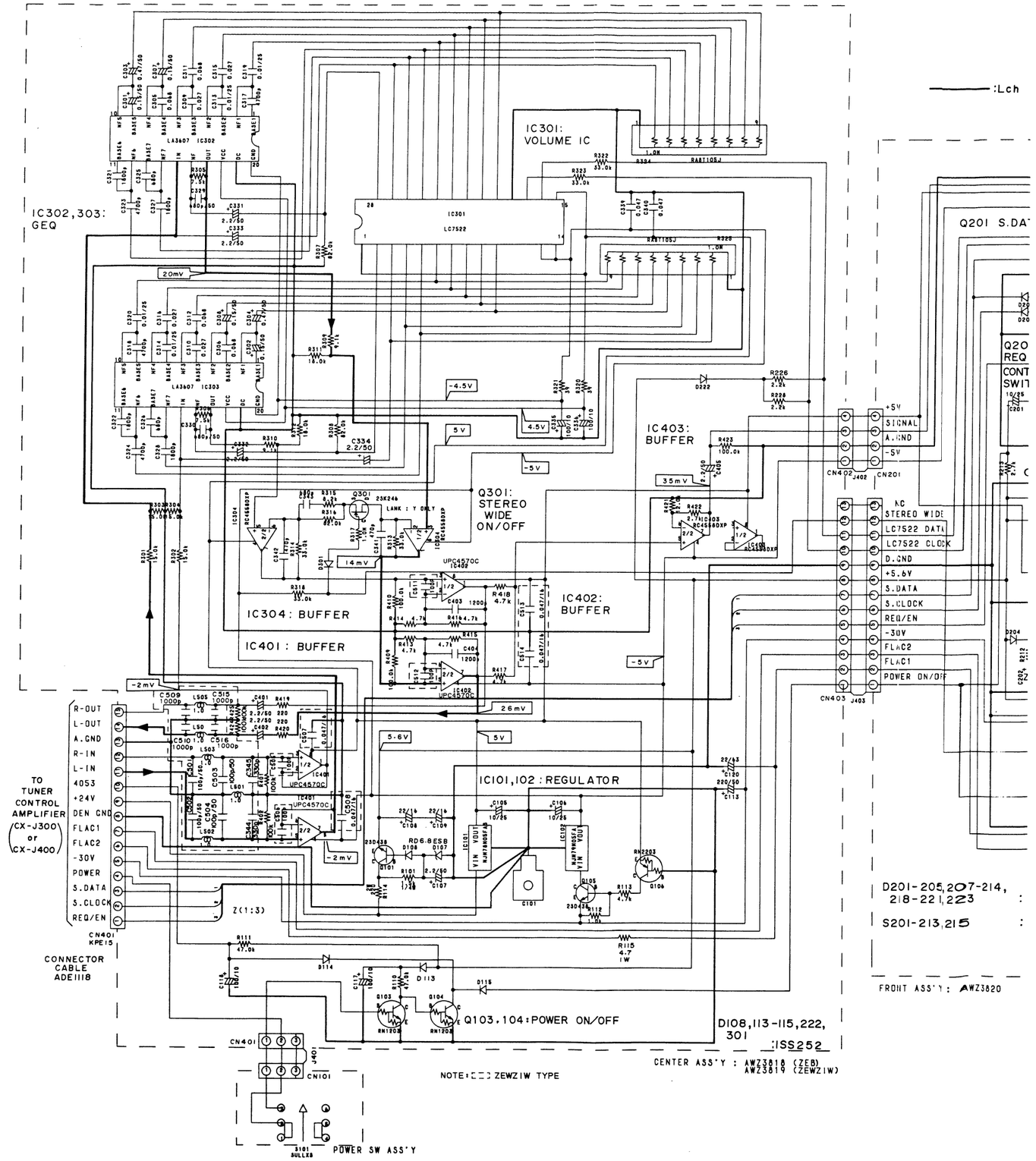
3.VOLTAGE, CURRENT :
; DC voltage (V) at no input signal unless otherwise noted.
⇦mA or ←mA ; DC current at no input signal unless otherwise noted.

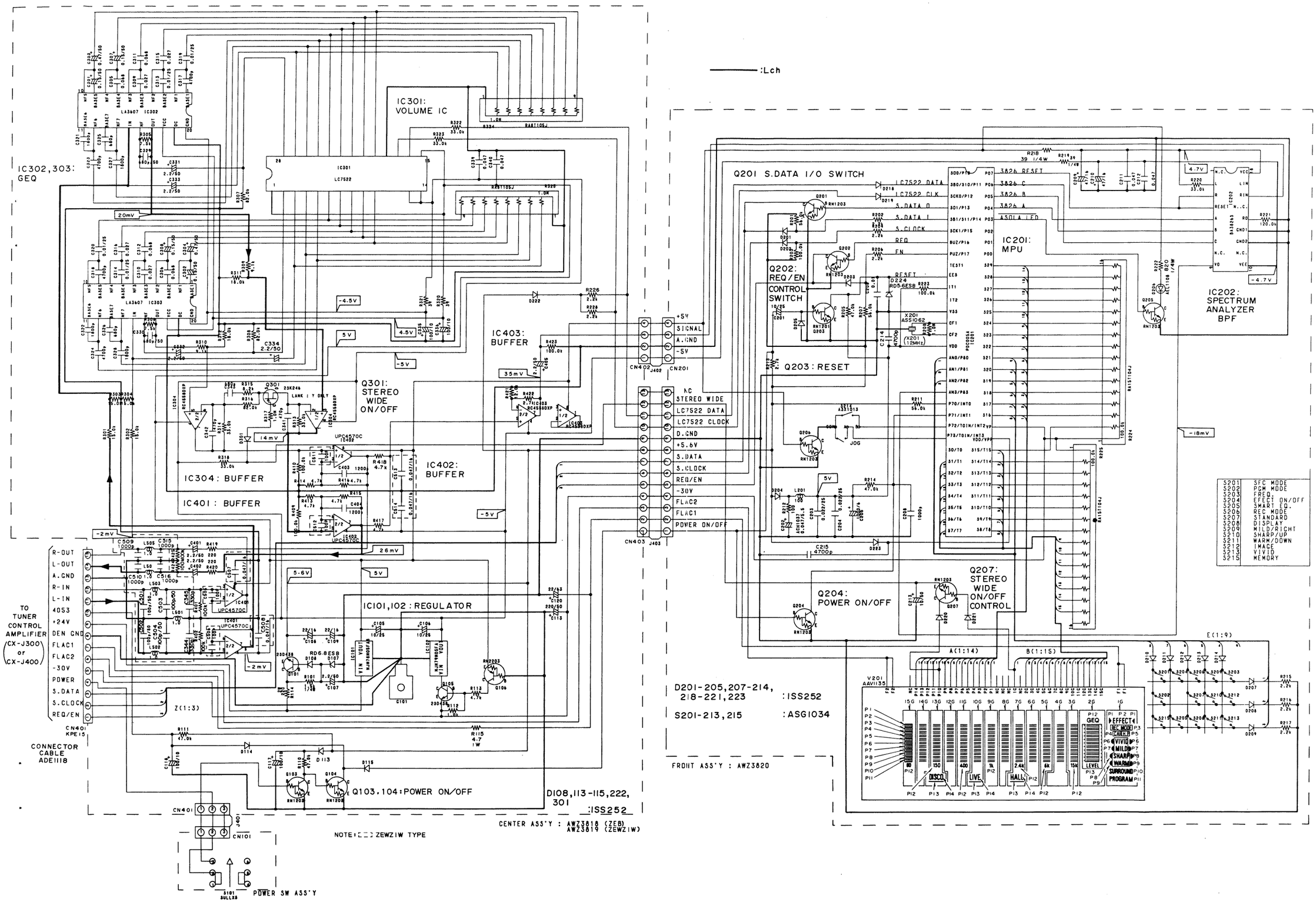
4.OTHERS :
➡ ; Signal route.
⊘ ; Adjusting point
The ⚠ mark found on some component parts indicates the inportance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES : (The underlined indicates the switch position)
FRONT Assembly

S201	SFC MODE
S202	PGM MODE
S203	FREQ.
S204	EFFECT
S205	SMART EQ.
S206	REC MODE
S207	STANDARD
S208	DISPLAY
S209	MILD
S210	SHARP
S211	WARM
S212	IMAGE
S213	VIVID
S215	MEMORY




IC301: VOLUME IC
IC302,303: GEQ
IC304 : BUFFER
IC401 : BUFFER
IC402: BUFFER
IC403: BUFFER
Q301: STEREO WIDE ON/OFF
IC101,102 : REGULATOR
Q103,104 : POWER ON/OFF
Q201 S.DATA I/O SWITCH
Q202: REQ/EN CONTROL SWITCH
Q203 : RESET
Q204: POWER ON/OFF
Q207: STEREO WIDE ON/OFF CONTROL
IC201: MPU
IC202: SPECTRUM ANALYZER BPF
:Lch
TO TUNER CONTROL AMPLIFIER (CX-J300 or CX-J400)
CONNECTOR CABLE ADE1118
CN401 KPE15
CN402 J402
CN403 J403
CN201
CN101 J401
S101 SULLX8 POWER SW ASS'Y
D201-205,207-214, 218-221,223 :ISS252
S201-213,215 :ASG1034
D108,113-115,222, 301 :ISS252
FRONT ASS'Y : AWZ3820
CENTER ASS'Y : AWZ3818 (ZEB) AWZ3819 (ZEWZIW)
NOTE: □□ ZEWZIW TYPE
S201 SFC MODE
S202 PGM MODE
S203 FREQ.
S204 EFFECT ON/OFF
S205 SMART ED.
S206 REC MODE
S207 STANDARD
S208 DISPLAY
S209 MILD/RIGHT
S210 SHARP/UP
S211 WARM/DOWN
S212 IMAGE
S213 VIVID
S215 MEMORY

4. PCB CONNECTIONS DIAGRAMS

CENTER Ass'y(AWZ3818), FRONT Ass'y(AWZ3820) AND POWER SW Ass'y

NOTE

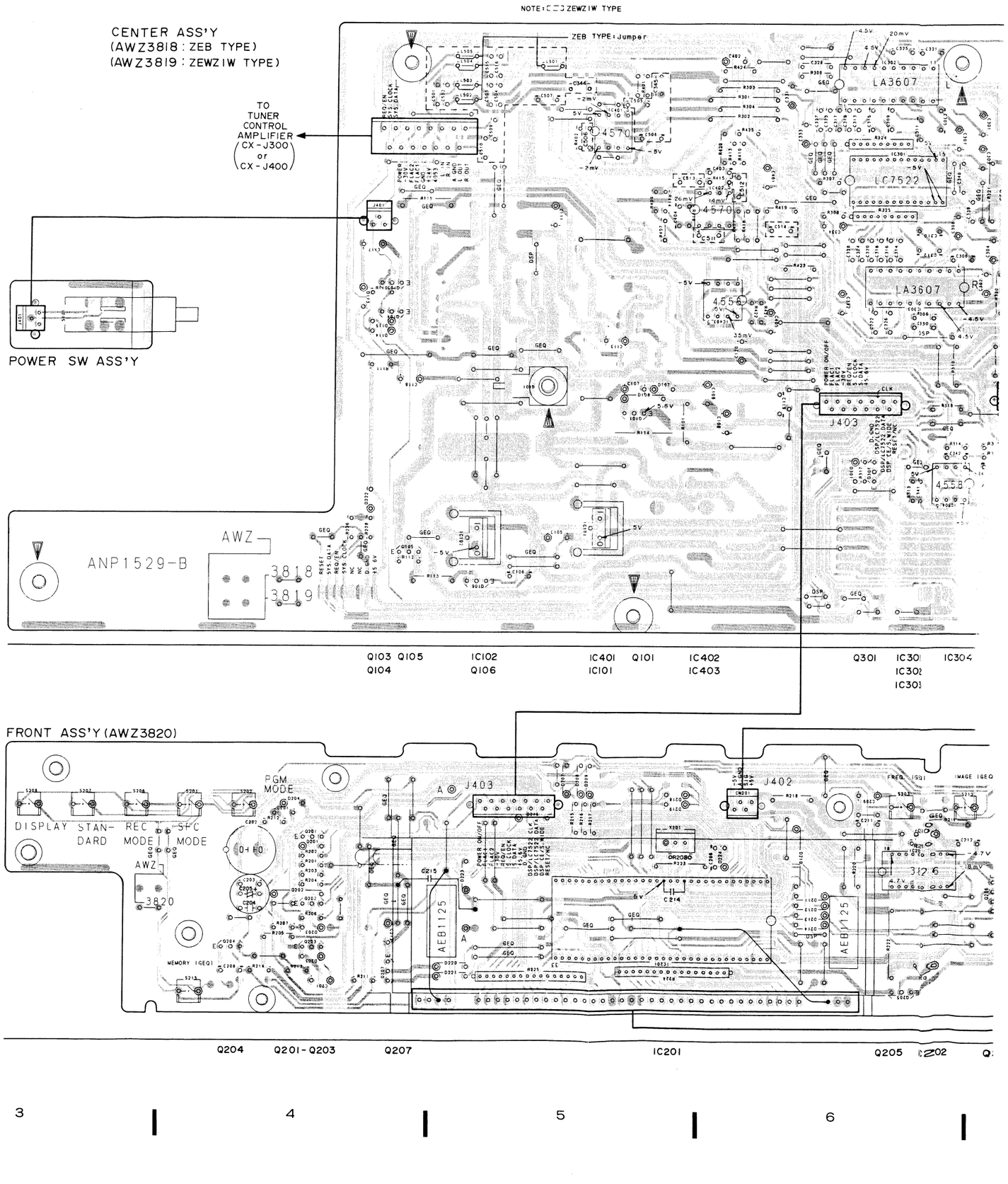
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wirng symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 (E)	or	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ◎ (double circles) shows negative terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



CENTER ASS'Y
(AWZ3818 : ZEB TYPE)
(AWZ3819 : ZEWZIW TYPE)

NOTE: □□ ZEWZIW TYPE

ZEB TYPE: Jumper

TO TUNER CONTROL AMPLIFIER (CX-J300 or CX-J400)

ER SW ASS'Y

ANP1529-B

AWZ 3818 / 3819

Q103 Q105 Q104 | IC102 Q106 | IC401 IC101 | Q101 | IC402 IC403 | Q301 | IC301 IC302 IC303 | IC304

IT ASS'Y (AWZ3820)

PLAY STAN-DARD | REC SPC MODE | MODE

AWZ 3820

PGM MODE

MEMORY (GEQ)

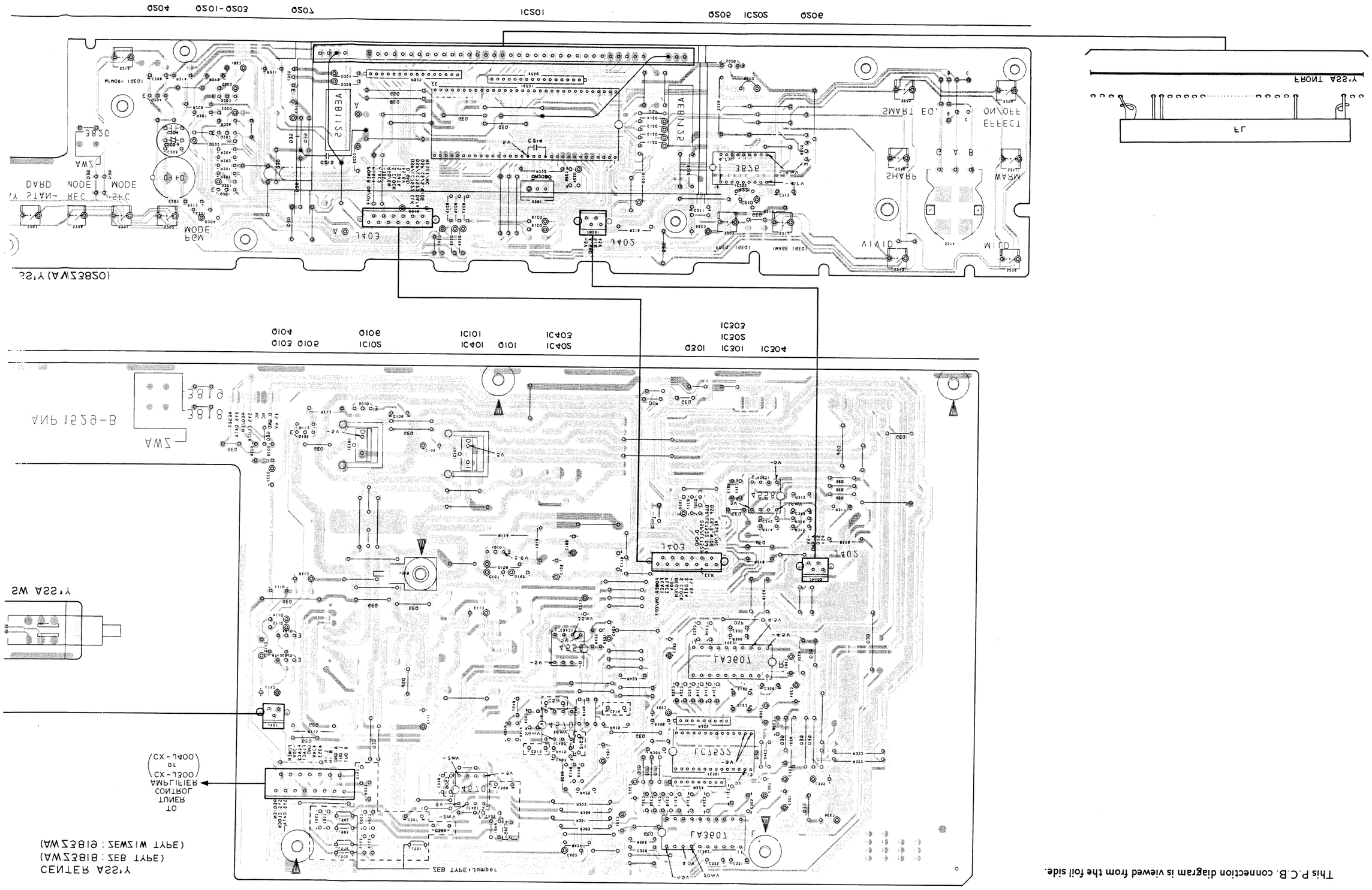
FREQ. (GEQ) | IMAGE (GEQ)

VIVID | MILD | SHARP | WARM | SMART EQ. | EFFECT ON/OFF

Q204 | Q201-Q203 | Q207 | IC201 | Q205 IC202 Q206

FL

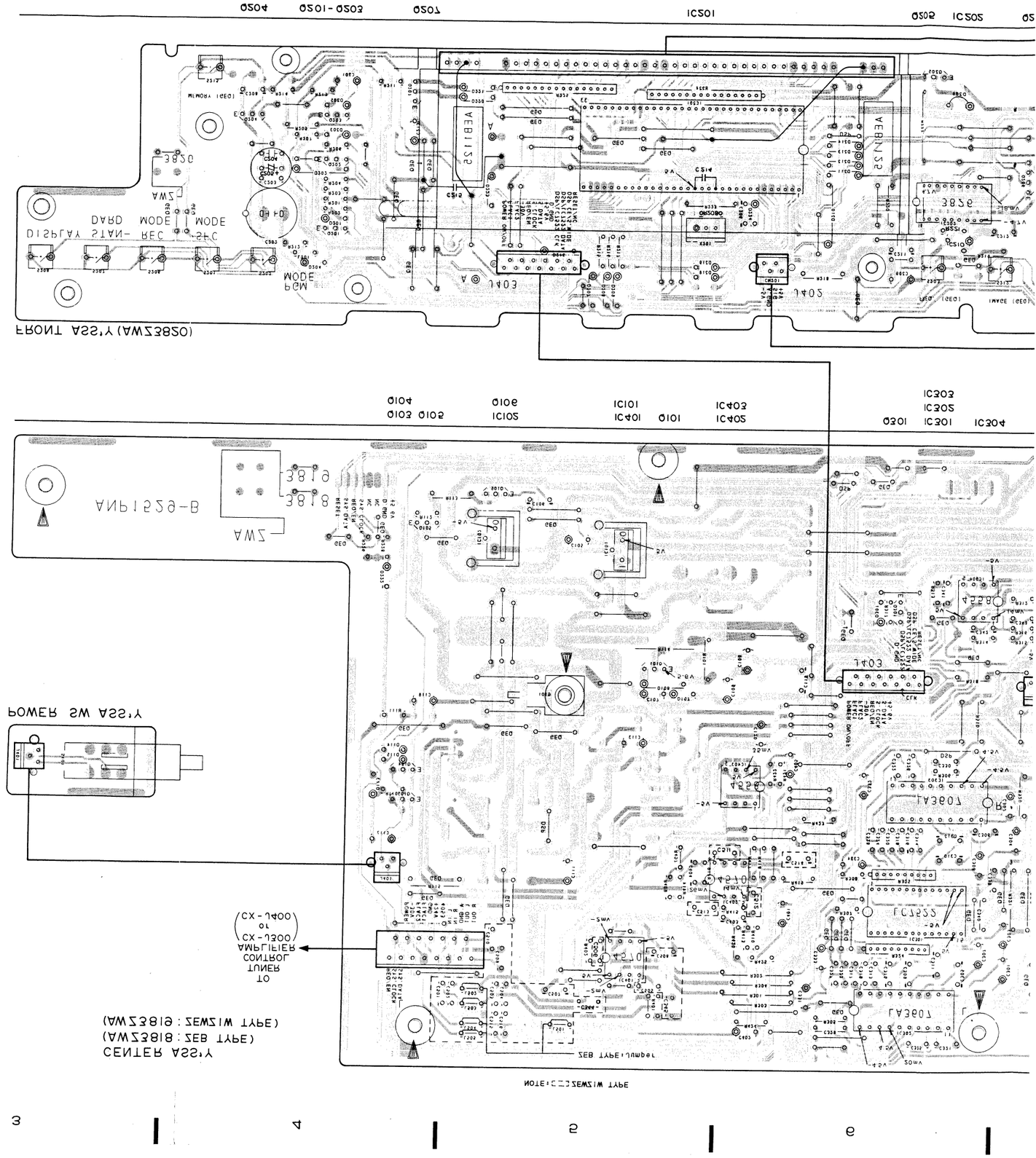
FRONT ASS'Y



This P.C.B. connection diagram is viewed from the foil side.

4. PCB CONNECTIONS DIAGRAMS

CENTER Ass'y(AWZ3818), FRONT Ass'y(AWZ3850) AND POWER SW Ass'y



5. PCB PARTS LIST

NOTES:

- *Part without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 *When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).*

560Ω 56×10¹ 561 ..... *RD1/4PS 5 6 1 J*
47kΩ 47×10³ 473 ..... *RD1/4PS 4 7 3 J*
0.5Ω 0R5 ..... *RD2H 0 R 5 K*
1Ω 010 ..... *RD1P 0 1 0 K*

Ex.2 *When there are 3 effective digits (such as in high precision metal film resistors).*

5.62kΩ 562×10¹ 5621 ..... *RD1/4SR 5 6 2 1 F*

Mark	No.	Description	Parts No.
LIST OF ASSEMBLIES			
◉		CENTER ASS'Y	AWZ3818
◉		FRONT ASS'Y	AWZ3820
		POWER SW ASS'Y	
◉CENTER ASS'Y(AWZ3818)			
SEMICONDUCTORS			
	IC101	REGULATOR IC	NJM78M05FAS
	IC102	REGULATOR IC	NJM79M05FA
	IC301	GEQ EVR IC	LC7522
	IC302,303	GEQ IC	LA3607
	IC304	OP-AMP IC	RC4558DXP
	IC401,402	IC	UPC4570C
	IC403	OP-AMP IC	RC4558DXP
	Q101	TRANSISTOR	2SD438
	Q103,104	TRANSISTOR	RN1203
	Q105	TRANSISTOR	2SD438
	Q106	TRANSISTOR	RN2203
	Q301	N-FET	2SK246
	D107	ZENER DIODE	RD6.8ESB
	D108	DIODE	1SS252
	D113-115	DIODE	1SS252
	D222	DIODE	1SS252
	D301	DIODE	1SS252
CAPACITORS			
	C105,106	ELECTR.CAPACITOR	CEAS100M25
	C107	ELECTR.CAPACITOR	CEAS2R2M50
	C108,109	ELECTR.CAPACITOR	CEAS220M16
	C113	ELECTROLYTIC CAPACIT	CEAS221M50
	C117,118	ELECTR.CAPACITOR	CEAS101M10
	C119	CERAMIC CAPACITOR	CKDYB102K50
	C120	ELECTROLYTIC CAPACIT	CEAS220M63
	C301,302	ELECTROLYTIC CAPACIT	CEASR15M50
	C303	ELECTROLYTIC CAPACIT	CEASR47M50
	C304	ELECTR.CAPACITOR	CEASR47M50
	C305,306	CERAMIC CAPACITOR	CKDYX683M25
	C307,308	ELECTROLYTIC CAPACIT	CEASR15M50
	C309,310	CERAMIC CAPACITOR	CKDYX273M25
	C311,312	CERAMIC CAPACITOR	CKDYX683M25
	C313,314		CKPUYF103Z25
	C315,316	CERAMIC CAPACITOR	CKDYX273M25
	C317,318	CERAMIC CAPACITOR	CKPUYX472M16
	C319,320	CERAMIC CAPACITOR	CKPUYF103Z25
	C321,322	CERAMIC CAPACITOR	CKPUYX182M16
	C323,324	CERAMIC CAPACITOR	CKPUYX472M16
	C325,326	AXIAL CAPACITOR	CKPUYB681K50
	C327,328	CERAMIC CAPACITOR	CKPUYX182M16
	C329,330	AXIAL CAPACITOR	CKPUYB681K50
	C331-334	ELECTR.CAPACITOR	CEAS2R2M50
	C335,336	ELECTR.CAPACITOR	CEAS101M10
	C339,340	CERAMIC CAPACITOR	CKDYF473Z50
	C341,342	CERAMIC CAPACITOR	CKDYB471K50
	C343	CERAMIC CAPACITOR	CKDYB681K50
	C401,402	ELECTR.CAPACITOR	CEAS2R2M50
	C403,404	CERAMIC CAPACITOR	CKDYB122K50
	C405	ELECTR.CAPACITOR	CEAS2R2M50
RESISTORS			
	R101	CARBON FILM RESISTER	RD1/4PM152J
	R113	CARBON FILM RESISTOR	RD1/4PM472J
	R114	METAL OXIDE RESISTOR	RS2LMF221J
	R115	METAL OXIDE RESISTOR	RS1LMF4R7J
	R320,321	CARBON FILM RESISTOR	RD1/4PM390J
	R324,325	RESISTOR ARRAY (1M)	RA8T105J
	Other resistors		RD1/8PM□□□J
OTHERS			
	CN401	CONNECTOR(15P)	KPE15
		SCREW	BBZ30P08□FZK

Mark	No.	Description	Parts No.

◉FRONT ASS'Y(AWZ3820)

SEMICONDUCTORS

	IC201	GEQ MPU IC	PDC005A
	IC202	GEQ−BPF IC	BA3826S
	Q201,202	TRANSISTOR	RN1203
	Q203	TRANSISTOR	RN1201
	Q204−207	TRANSISTOR	RN1203
	D201−205	DIODE	1SS252
	D206	LED(RED)	AEL1108
	D207−214	DIODE	1SS252
	D218−221	DIODE	1SS252
	D223	DIODE	1SS252
	D224	ZENER DIODE	RD5.6ESB

SWITCHES

	S201−213	SWITCH (SFC MODE, PRM MODE, FREQ., EFFECT, SMART EQ.,REC MODE STANDARD, DISPLAY, MILD, SHARP, WARM,IMAGE, VIVID)	ASG1034
	S214	ROTARY ENCODER	ASX1013
	S215	SWITCH (MEMORY)	ASG1034

COIL

	L201	AXIAL INDUCTOR	LAU101K

CAPACITORS

	C201	ELECTR.CAPACITOR	CEAS100M25
	C202	CEA (47000/5.5V)	ACH1037
	C203,204	CERAMIC CAPACITOR	CKPUYF223Z25
	C205	ELECTROLYTIC CAPACIT	CEAS102M6
	C206	CERAMIC CAPACITOR	CKDYF103Z50
	C208	CERAMIC CAPACITOR	CKDYB102K50
	C209,210	ELECTR.CAPACITOR	CEAS470M16
	C211,212	CERAMIC CAPACITOR	CKDYF473Z50
	C213	ELECTR.CAPACITOR	CEAS100M50
	C214,215	CERAMIC CAPACITOR	CKDYB472K50

RESISTORS

	R218,219	CARBON FILM RESISTOR	RD1/4PM390J
	R222	CARBON FILM RESISTOR	RD1/4PM821J
	R224,225	RESISTOR ARRAY(100K)	RA15T104J
	Other resistors		RD1/8PM□□□J

OTHERS

	V201	FL TUBE	AAV1135
	X201	CERAMIC RESONATOR (12MHz)	ASS1062

POWER SW ASS'Y

SWITCH

	S101	PUSH SWITCH (POWER)	SULLXS

6. FOR GR-J300/ZEB TYPE

NOTES :

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

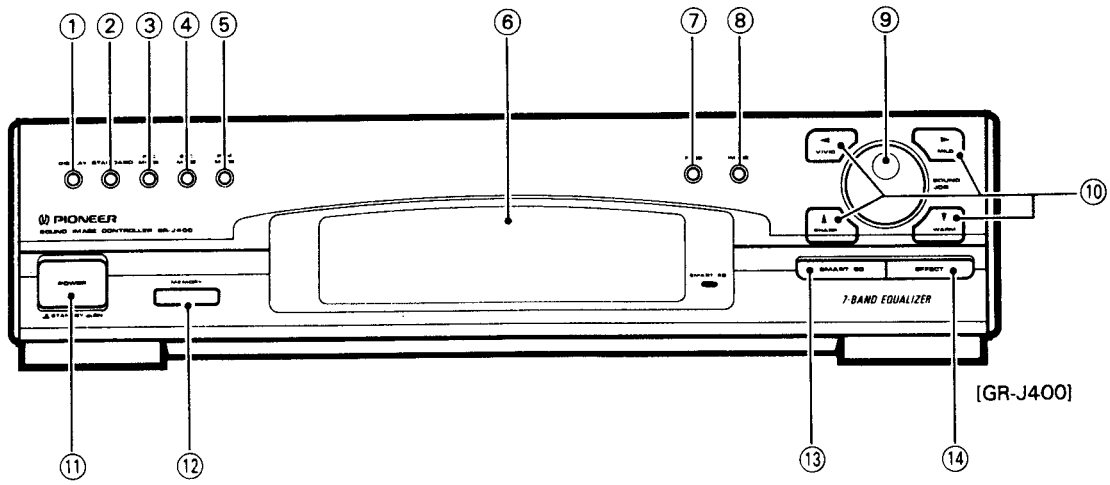
CONTRAST OF MISCELLANEOUS PARTS

GR-J300/ZEB and GR-J400/ZEB have the same construction except for the following :

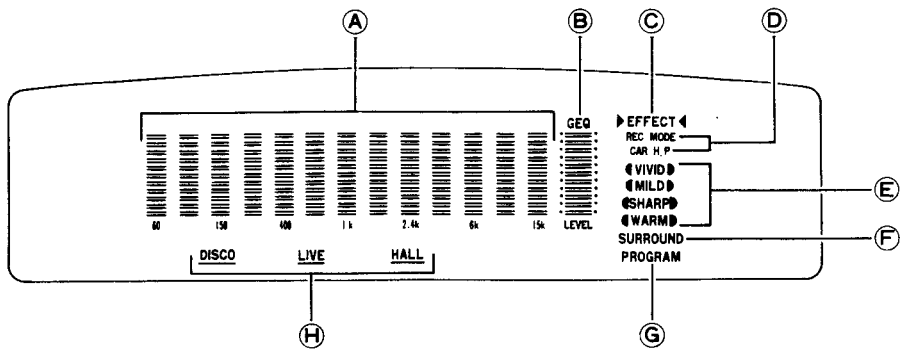
Mark	Symbol & Description	Part No.		Remarks
		GR-J400 ZEB type	GR-J300 ZEB type	
	Front panel	AMB1919	AMB1922	
	Foot assy (ABS)	RXA1448	RXA1277	
	Packing case	AHD2198	AHD2199	

7. PANEL FACILITIES

FRONT PANEL



[GR-J400]



① DISPLAY button

Use to switch the display mode in the display section. Spectrum analyzer and graphic equalizer display is possible.

② STANDARD button

Use to return to the standard SFC mode effect settings.

③ REC MODE button

Press to set recording frequency response to optimum levels for car stereo or headphone stereo.

④ SFC MODE button

Use to recall DISCO, LIVE and HALL SFC modes.

⑤ PGM MODE button

Use to select sound fields you have created and memorized yourself. Each time you press the button, the sound field changes as follows.

A → B → C

⑥ Display section

Ⓐ Visually displays the positions of the spectrum analyzer and graphics equalizer.
Ⓑ Displays input level.
Ⓒ Displays image effect ▶, ◀.
Ⓓ Displays the status of the REC MODE selector. (CAR, H.P)
Ⓔ Indicates which of effect mode is ON or OFF. When the effect mode in ON, displays image effect ◖, ◗.
Ⓕ Lights when surround is ON.
Ⓖ When this is flashing, indicates that programmed A – C contents can be recalled.
Ⓗ The line under the mode selected with the SFC MODE button lights.

⑦ FREQ button

Select this mode when you want to perform fine adjustments to the sound quality.
After you have finished adjusting the sound, the mode automatically switches to the image mode after five seconds or more.

⑧ IMAGE button
Switch to this mode when you want to select an image effect for adjustment.

⑨ SOUND JOG
Use to change the sound effect characteristics level.

⑩ Image effect buttons (VIVID, MILD, SHARP, WARM)
Use these buttons to recall previous effect mode settings. After recalling the desired effect mode, the effect level can be adjusted by using SOUND JOG.

⑪ POWER STANDBY/ON switch
This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness. When nothing is indicated in the display section, the unit is in STANDBY.

⑫ MEMORY button
Used for storing sound field you input with the SFC MODE button.

⑬ SMART EQ. button
When this button is ON, the unit automatically equalizes the sound to optimize the adjusted sound field to match the source.

⑭ EFFECT button
Use to set sound effect characteristics.

8. SPECIFICATIONS

Center frequencies ..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
Maximum range of variation ..... ±7 dB

Spectrum Analyzer Section
Center frequencies ..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
External dimensions ..... 360 (W) x 90.5 (H) x 329 (D) mm
Weight ..... 2.6 kg